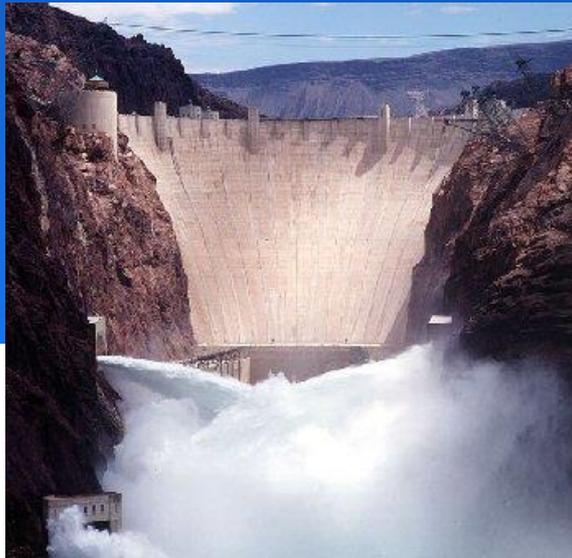


# ***COLORADO RIVER BASIN UPDATE AND STATUS***

Presented to

**Arizona Water Banking Authority**  
**December 4, 2019**



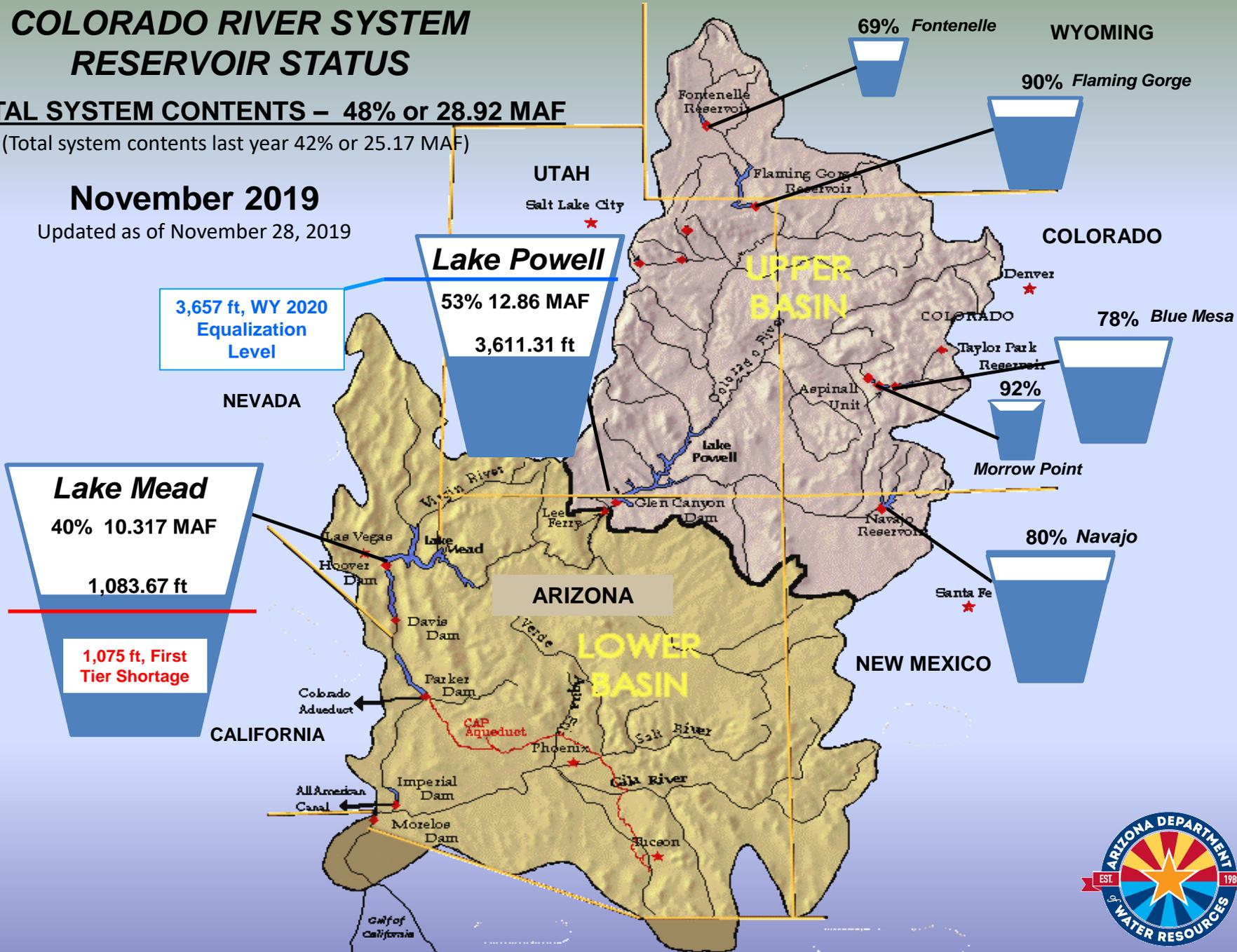
# COLORADO RIVER SYSTEM RESERVOIR STATUS

**TOTAL SYSTEM CONTENTS – 48% or 28.92 MAF**

(Total system contents last year 42% or 25.17 MAF)

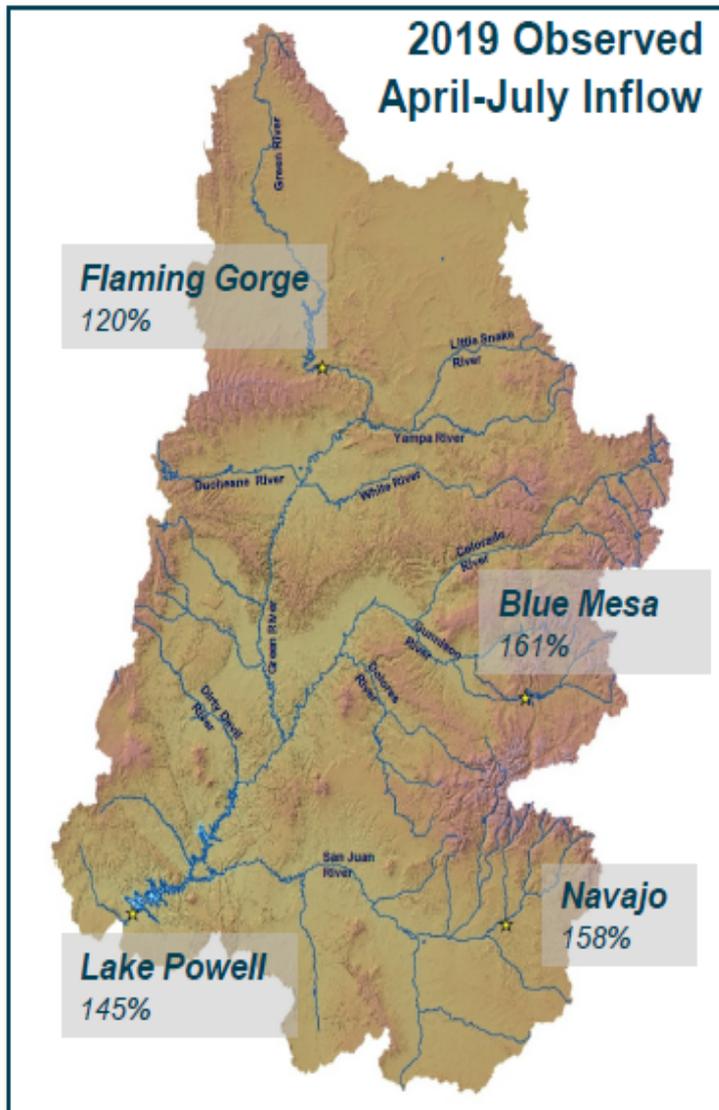
**November 2019**

Updated as of November 28, 2019



# CBRFC Unregulated Inflow Forecast

## Dated November 1, 2019



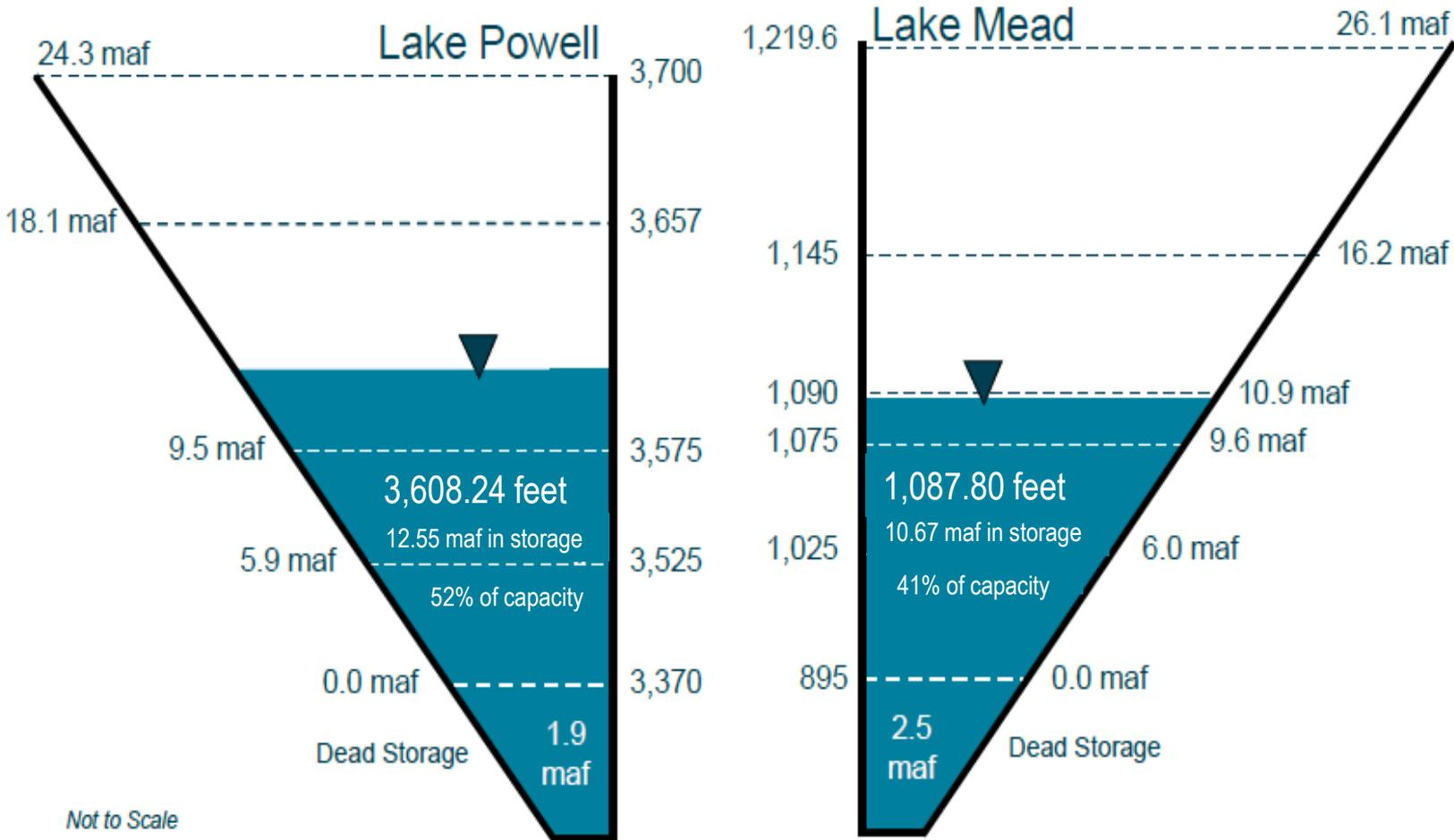
Powell Unregulated Inflow Forecast		
Month/Period	Inflow (kaf)	Percent of Average
Oct 2019 <i>(Observed)</i>	265	52
Nov 2019	350	74
Dec 2019	320	88
Jan 2020	320	89
2019 Apr-Jul <i>(Observed)</i>	10,410	145
WY 2019 <i>(Observed)</i>	12,951	120



# End of Calendar Year 2019 Projections

November 2019 24-Month Study Most Probable Inflow Scenario<sup>1</sup>

*Based on a Lake Powell release of 9.00 maf in WY 2019 & 8.23 maf in WY 2020*



Not to Scale

<sup>1</sup> WY 2020 unregulated inflow into Lake Powell is based on the CBRFC forecast date 6/14/19.



# Lower Basin Side Inflows - WY/CY 2019<sup>1,2</sup>

## Intervening Flow from Glen Canyon to Hoover Dam

Month in WY/CY 2019		5-Year Average Intervening Flow (KAF)	Observed Intervening Flow (KAF)	Observed Intervening Flow (% of Average)	Difference From 5-Year Average (KAF)
HISTORICAL	October 2018	82	100	122%	18
	November 2018	54	67	124%	13
	December 2018	51	52	102%	1
	January 2019	83	106	128%	23
	February 2019	91	126	138%	35
	March 2019	57	200	351%	143
	April 2019	49	118	241%	69
	May 2019	30	108	360%	78
	June 2019	17	69	406%	52
	July 2019	80	19	24%	-61
	August 2019	100	65	65%	-35
	September 2019	91	60	66%	-31
	October 2019	82	35	43%	-47
FUTURE	November 2019	54			
	December 2019	51			
	<b>WY 2019 Totals</b>	785	1090	139%	305
	<b>CY 2019 Totals</b>	785	906	115%	226

<sup>1</sup> Values were computed with the LC's gain-loss model for the most recent 24-month study

<sup>2</sup> Percents of average are based on the 5-year mean from 2014-2018

# Lower Basin – Lake Mead

## Percent of Traces with Event or System Condition

### Results from August 2019 CRSS (using the Full Hydrology)

(values in percent)

Event or System Condition	2020	2021	2022	2023	2024
<b>Surplus Condition – any amount (Mead <math>\geq</math> 1,145 ft)</b>	<b>0</b>	<b>0</b>	<b>7</b>	<b>13</b>	<b>19</b>
Surplus – Flood Control	0	0	<1	3	3
<b>Normal or ICS Surplus Condition (Mead &lt; 1,145 and &gt; 1,075 ft)</b>	<b>100</b>	<b>96</b>	<b>69</b>	<b>51</b>	<b>38</b>
Recovery of DCP ICS / Mexico's Water Savings (Mead $\geq$ 1,110 ft)	0	9	19	27	32
DCP Contribution / Mexico's Water Savings (Mead $\leq$ 1,090 and > 1,075 ft)	100	70	44	28	19
<b>Shortage Condition – any amount (Mead <math>\leq</math> 1,075 ft)</b>	<b>0</b>	<b>4</b>	<b>24</b>	<b>37</b>	<b>43</b>
<i>Shortage / Reduction – 1<sup>st</sup> level (Mead <math>\leq</math> 1,075 and <math>\geq</math> 1,050)</i>	<i>0</i>	<i>4</i>	<i>24</i>	<i>29</i>	<i>28</i>
DCP Contribution / Mexico's Water Savings (Mead $\leq$ 1,075 and > 1,050 ft)	0	4	24	29	28
<i>Shortage / Reduction – 2<sup>nd</sup> level (Mead &lt; 1,050 and <math>\geq</math> 1,025)</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>8</i>	<i>11</i>
DCP Contribution / Mexico's Water Savings (Mead $\leq$ 1,050 and > 1,045 ft)	0	0	0	<1	4
DCP Contribution / Mexico's Water Savings (Mead $\leq$ 1,045 and > 1,040 ft)	0	0	0	3	3
DCP Contribution / Mexico's Water Savings (Mead $\leq$ 1,040 and > 1,035 ft)	0	0	0	2	2
DCP Contribution / Mexico's Water Savings (Mead $\leq$ 1,035 and > 1,030 ft)	0	0	0	2	2
DCP Contribution / Mexico's Water Savings (Mead $\leq$ 1,030 and $\geq$ 1,025 ft)	0	0	0	<1	<1
<i>Shortage / Reduction – 3<sup>rd</sup> level (Mead &lt; 1,025)</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>4</i>
DCP Contribution / Mexico's Water Savings (Mead $\leq$ 1,025 ft)	0	0	0	0	4

Notes:

<sup>1</sup> Modeled operations include the 2007 Interim Guidelines, Upper Basin Drought Response Operations, Lower Basin Drought Contingency Plan, and Minute 323, including the Binational Water Scarcity Contingency Plan.

<sup>2</sup> Reservoir initial conditions on December 31, 2019 were simulated using the August 2019 Most Probable 24 Month Study.

<sup>3</sup> Full Hydrology uses 112 hydrologic inflow sequences based on resampling of the observed natural flow record from 1906-2017 for a total of 112 traces analyzed.

<sup>4</sup> Percentages shown in this table may not be representative of the full range of future possibilities that could occur with different modeling assumptions.

<sup>5</sup> Percentages shown may not sum to 100% due to rounding to the nearest percent.

# Colorado Basin River Forecast Center

## Lake Powell 104 Group

